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Serum Lipid and Thyroid Function Test was Correlated with BMD in Old Aged Women

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Objective : To investigate serum marker which are correlated with the low bone mineral density (BMD) in old aged (≥65 years) Korean women.

Methods : Medical records of 154 postmenopausal women aged over 65 years who visited health care clinic of our hospital were reviewed retrospectively. We investigated women's baseline characteristics including age, height, weight, body mass index (BMI) and laboratory findings including serum lipid profile, thyroid hormone, calcium, phosphorus, bone alkaline phosphatase. Bone mineral density (BMD) was measured with DXA (Prodigy; *GE-lunar*, Houston, TX, USA). The correlation between laboratory test result and BMD was analyzed using R statistical package (version 2.13.1).

Results : Mean age was 69.77 ± 6.45 years and mean BMI was 24.46 ± 3.63(kg/m^2). The low BMD including osteoporosis and osteopenia was significantly associated with age, Triiodothyronine (T3) and HDL-cholesterol level. The low femur BMD was associated with serum HDL-cholesterol level. The lumbar BMD was significantly correlated with serum-cholesterol, HDL.. T3 was negatively correlated with lumbar and femur BMD and T4 was negatively correlated with femur BMD. TSH was no significant relationship with BMD.

Conclusion : The levels of serum HDL-cholesterol and T3 could be used as indirect markers for low BMD in old aged women.

Keywords : Bone, Lipid, Old age, Thyroid hormone

0044

Bone Densitometry Service and the Post-fracture Care Gap in Hong Kong: How Bad is the Situation.

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Introduction: Patients who sustain an osteoporotic fracture are at increased risk of sustaining further osteoporotic fracture. There are international guidelines to close this post-fracture care gap but not in Hong Kong. Older patients presenting with fractures should be offered assessment for osteoporosis by axial bone densitometry. We report the current situation and practice of using bone densitometry assessment after osteoporotic hip fracture.

Methods: We retrieved patients with new osteoporotic hip fractures age 65 or above with DXA performed within one year after fracture, admitted from 1st Jan 2012 to 30th June 2014 using Hospital Authority CDARS.

Results: 11397 osteoporotic hip fracture patients were included. Only 398 patients (3.49%) received DXA within one year after fracture. Among the group with DXA performed, 69% were from two Hospitals. The other 11 hospitals contribute the remaining 31%.

Discussion and conclusion: There is a huge post-fracture care gap in secondary prevention for osteoporotic hip fracture patient in Hong Kong. Majority of the patients in Hong Kong are neither diagnosed nor being tested for osteoporosis and remained untreated. The Government needs to allocate more resources to implement the best practices framework to those high risk post-hip fracture patients before they go on to break another bone. By reducing the number of subsequent osteoporotic fractures, the Government can get significant cost savings that can be utilized in other valuable healthcare program.

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Fracture Risk of Adjuvant Therapies in Young Breast Cancer Patients: A Population-Based Study

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Introduction: Breast cancer survivors have an increased risk of bone fracture. But the risk among young patients with adjuvant therapies remains unknown. This population-based study is aimed to assess the incidence and risk of fracture among young (age of 20 to 39 years) breast cancer patients who received adjuvant therapies.

Materials and Methods: From January 2001 to December 2007, 5,146 newly diagnosed breast cancer patients were enrolled from the National Health Insurance Research Database (NHIRD) in Taiwan. Patients were observed for a maximum of 6 years to determine the incidence of newly onset fracture. Kaplan Meier and Cox regression analyses were used to evaluate the risk of fracture in young breast cancer patients who received adjuvant treatments.

Results: Of the total 5,146 young (age of 20 to 39 years) breast cancer patients, the Cox multivariate proportional hazards analysis showed that AIs, radiotherapy, and monoclonal antibodies were significantly associated with a high risk of fracture. Moreover, patients who received AIs for more than 180 days had a high hazard ratio (HR) of 1.77 (95% CI = 0.68–4.57), and patients who received more than four radiotherapy visits had a high HR of 2.54 (95% CI = 1.07–6.06). Under the site-specific analysis, young breast cancer patients who received AIs had the highest risk of hip fracture (HR = 8.520, 95% CI = 1.711–42.432, $p < 0.04$), whereas patients who received radiotherapy had the highest risk of vertebral fracture (HR = 5.512, 95% CI = 1.847–16.451, $p < 0.01$).

Discussion/Conclusions: Young breast cancer patients who are receiving AIs, radiotherapy or monoclonal antibody need to be more careful for preventing fracture events. Breast cancer treatment plans are suggested to incorporate fracture prevention interventions.

0060

The Effect of Cemented and Uncemented Implants on the Measurement of Proximal Femur BMD

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Objective: The study was performed to test the hypothesis that cemented and uncemented implants influenced the measurement of proximal femur BMD.

Methods: 10 patients underwent THA with cemented or uncemented implants due to developmental dysplasia of the hip, femoral neck fracture or femoral head necrosis from January 2015 to July 2015 were included. The patients' BMD of L1-L4 and femoral neck were measured preoperative. We measured the BMD of proximal femur

after divided it into Gruen zone 1-Gruen zone 71 day before the operation, 1 week after the operation and 3 months after the operation, respectively.

Results: 5 patients (3male, 2female) used uncemented implants, mean age were 61y. Another 5 patients use cemented implants, mean age were 80y. The mean preoperative BMD of uncemented group were G1: 0.762 ± 0.432 g/cm^2; G2: 1.572 ± 0.570 g/cm^2; G3: 1.973 ± 0.314 g/cm^2; G4: 1.962 ± 0.314 g/cm^2; G5: 1.900 ± 0.672 g/cm^2; G6: 1.547 ± 0.966 g/cm^2; G7: 1.038 ± 0.268 g/cm^2. And the mean preoperative BMD of cemented group were G1: 0.548 ± 0.204 g/cm^2; G2: 1.260 ± 0.498 g/cm^2; G3: 1.552 ± 1.000 g/cm^2; G4: 1.492 ± 0.832 g/cm^2; G5:1.454 ± 0.672 g/cm^2; G6: 0.988 ± 0.062 g/cm^2; G7: 0.704 ± 0.398 g/cm^2. The mean BMD of uncemented group increased 1 week after the operation, especially in Gruen zone 1,2,6 and 7. The mean BMD of cemented group increased in all 7 zones obviously. But there is not statistical significance between preoperative group and postoperative group in both groups ($p < 0.05$). The mean BMD measured 3 months after the operation decreased comparing to 1 week after the operation, but there is not statistical significance ($p < 0.05$).

Conclusion: The proximal femoral neck BMD increased postoperative comparing to preoperative. The implants and the bone cement may affect the measurement of proximal femoral neck by DEXA.

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Epidemiological Investigation of Osteoporosis Morbidity in the Elderly of Guangzhou Community

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Background: Quantitative ultrasound (QUS), developed in the 1990's, is a non-invasive method to evaluate the bone mass and predict the risk of fracture with the advantage of Simple operability and portability. Asian Osteoporosis self-assessment tool (OSTA) is an simple and effective assessment method for Asian osteoporosis. QUS and OSTA can be used as an effective tool to screening osteoporosis. DXA scan according to the screening result of QUS and OSTA can get the accurate Epidemiological findings of osteoporosis with a good economical benefit.

Method: We test the bone mass of 314 45 years of age or older women in Guangzhou community by Calcaneal quantitative ultrasound instrument and get the informations of age, BMI by questionnaire. Base on the screening standard suggested Nan-ping Yang(with the sensitivity of 84% and specificity of 61%), we considered the one whose OSTA≤ -1 or QUS-T≤ -2.5 to be a Suspected patients with osteoporosis.

Result: in this research, 102 of 314 Subjects were up to the standard of OSTA≤ -1 or QUS-T≤ -2.5, and we speculated the osteoporosis morbidity is (32.48%) in Guangzhou. 161 of 314 Subjects (51.27%) is found QUS-T≤ -1.0, which means lower bone glue and 44 of them is found QUS-T≤ -2.5. 91 of 314 Subjects (28.98%) is found OSTA≤ -1, which prompt high risk of osteoporosis. According to the result of this screening standard, the morbidity in 45-55 years-old group is 0%, in 56–65 years-old group is 10.00%, in 66–75 years-old group is 36.17%, in 76–85 years-old group is 72.58% and in the 86 years of age or older group is 100%.

Conclusion: this research found that the osteoporosis morbidity in the elderly of Guangzhou community maybe a little higher. With the analysis by synthesis of QUS and OSTA can screening patients at high risk of developing osteoporosis effectively.

0063

The Application of Baba Typing in the Femoral Periprosthetic Fractures after Hip Arthroplasty: a Better Classification System?

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Background: The ways to classify the femoral periprosthetic fractures after total hip replacement are various. Vancouver type is the most widely used among clinical application. However, there is no clear objective criterion for the stability of the prosthesis and the degree of bone loss in the classification system. According to the clinical experience, Baba et al found that when the femur and prosthesis were stable, the fracture of the prosthesis did not occur in the biological or bone cement fixation area, but in the non-fixed area, and they proposed a new type and tried to be used in clinical treatment. Anyway, how is the clinical application value of this type? Does this type have its advantages compared with the traditional Vancouver type? Few studies are rare.

Purpose: Vancouver typing and Baba typing were used to analyze the case of periprosthetic fractures in our hospital in order to find out the clinical application value of Baba typing.

Methods: From January 2005 to January 2014, 43 cases of femoral periprosthetic fractures were studied, including 7 males and 14.6 females, aged from 71.2 to 36 years old. Information of patients and X-ray of immediately after operation and X-ray of 1 year after operation were collected. 4 doctors (2 associate chief physicians, 2 residents) were introduced to the Baba typing and Vancouver typing, which made them able to evaluate the classification before operation and after 2 weeks, the same method was used to evaluate. The results of the evaluation would be discussed to reconfirm to propose a recommendation of surgical method, which would be compared with the actual situation. The reliability and validity of Baba typing and Vancouver typing were calculated by statistical analysis.

Results: In the final coincidence of operation, the Baba typing and Vancouver typing were 83.7% and 86% respectively, and the Baba score was slightly higher than Vancouver score. The reliability of Baba classification and Vancouver classification were 0.76 and 0.51, respectively, and the reliability of the observation was 0.74 and 0.65 respectively. The validity of the two types was 0.81 and 0.78 respectively.

Conclusion: Baba typing can be easily applied to clinical, and its surgical compliance, reliability and validity are higher than Vancouver typing, can be a better guide among clinical treatment.

0064

Prevalent Fractures and Osteoporosis among Adult Filipino Men

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Background: Osteoporosis in men is markedly underdiagnosed and undertreated even though the morbidity and mortality with fragility fractures are higher in men. The study aimed to identify predictors of osteoporosis and prevalent fractures among adult Filipino men.

Methodology: An analytical cross-sectional study of 184 Filipino men ^{3}50 years screened for bone mineral density was performed. Age, weight, body mass index (BMI), Osteoporosis Self-Assessment Tool for Asians (OSTA) score, smoking status, family history of fracture, diabetes mellitus, physical inactivity and T-score were considered. Test of proportions, logistic regression analysis, Hosmer-Lemeshow and Wald tests were used.